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Therefore in parthenogenetic reproduction it seems that the chromosomes FF, or factors for femaleness, are eliminated at parturition, and the resulting zygote is a male. And so far, as observed by the tests of breeding (regardless of color) the F₁ females (queens) produce drones of the constitution ffl₁cc, and are heterozygous for the factors I and C with the allelomorphs i and c, whether in queen or drone, and the only gametes that can be formed from these are IC Ic iC ic, when such individuals are bred together, heterozygous workers, as well as both *pure* dominants and *pure* recessives are produced, making it possible to recover the pure line of either race used in making the initial or primary cross.

CHARLES W. QUINN

HOUSTON HEIGHTS, TEXAS

SOCIETIES AND ACADEMIES

THE BIOLOGICAL SOCIETY OF WASHINGTON

THE 555th regular meeting of the Society was held in the Assembly Hall of the Cosmos Club, Saturday, April 22, 1916, and called to order by President Hay at 8 P.M., with 24 persons present.

On recommendation of the council George H. Clements, Washington, D. C., was elected to membership.

On recommendation of the council the following resolutions were read:

WHEREAS: Professor Wells W. Cooke, distinguished ornithologist, authority on bird migration, treasurer of the Biological Society of Washington, and an active member of the council of the society, has passed from this life, therefore be it

Resolved: That the Biological Society of Washington deeply regrets the death of one for many years so keenly interested in the affairs of the society, one who was a peculiarly efficient officer, a wise counselor and a charming companion, and extends its warmest sympathy to the family of Professor Cooke.

Signed N. HOLLISTER,
J. W. GIDLEY,
ALEX. WETMORE

Under the heading Brief Notes, Dr. Howard E. Ames commented upon a question raised at the 553d meeting as to the existence of a South American mammal having the mammae on the dorsal surface of the body. He had ascertained that this condition existed in the coypu (*Myocastor coypu*). Dr. Ames also offered information in regard to another question propounded at the same meeting as to the ability of camels to swim: According to Dr. E. A. Mearns dromedaries used in Abyssinia

were able to swim; and in a book by an English army officer of experience Dr. Ames had found a statement to the effect that camels were powerful swimmers. Comments followed by the chair and by Dr. L. O. Howard.

Under the same heading Dr. F. H. Blodgett, plant pathologist at the A. and M. College of Texas discussed the embryology of the duck weed, *Lemna* and exhibited seeds, remarking that though the plant was common the seeds were found seldom. Dr. Caldwell, of Chicago, had worked out the development of *Lemna* to the point of fertilization. Studies made by Dr. Blodgett carried the embryology from this point. The talk was illustrated by diagrams. Discussion followed by Mr. W. L. McAtee.

The first paper of the regular program was by T. H. Kearney: "Native Plants as Indicators of the Agricultural Value of Land." Mr. Kearney outlined the results of field work carried on with Dr. Shantz in the semiarid regions of the United States west of the 98th meridian of longitude. Typical areas were surveyed in Colorado, the Great Basin and in the southwest desert region. Detailed surveys defined the dominant types of vegetation and their distribution, and these were correlated with the varying degrees of salinity, moisture content and other physical properties of the soil. Areas actually under cultivation gave a check as regards productivity. From these studies it is now possible to predict agricultural possibilities by examination of the original types of vegetation in these regions. Typical plant growths and diagrams showing distribution were illustrated by lantern slides.

Mr. Kearney's paper was discussed by Messrs. W. L. McAtee, Wm. Palmer, A. Wetmore and Dr. L. O. Howard.

The last paper of the regular program was by Dr. R. W. Shufeldt: "Comparative Study of Certain Cranial Sutures in the Primates." Dr. Shufeldt stated that no other single vertebrate structure had so much written about it or was receiving more attention at the present time than the skull in man and the primates in general. This study was begun over two thousand years ago and certain names of bones bestowed by Galen in the second century are still retained. In a series of 6,000 human and about 1,000 ape skulls in the collections of the U. S. National Museum Dr. Shufeldt found that while the bones of the face exhibited but little variation, in the bones on the lateral aspect of the cranium were remarkable variations,

many of which are not referred to in modern works on anatomy. Frontal, parietal, temporal, alisphenoid and malar articulations show many variations in sutural lines. These again are varied by the presence or absence of epactal or epipteric bones. By means of lantern slides and diagrams these were illustrated and compared and the speaker touched upon their value in taxonomy and racial distinction and their pathological significance. Discussion followed by Drs. L. O. Howard and H. E. Ames and Mr. Wm. Palmer.

ALEXANDER WETMORE,
Recording Secretary, pro tem.

THE 556th regular meeting of the society was held in the Assembly Hall of the Cosmos Club, Saturday, May 6, 1916, called to order by President Hay at 8 P.M., with 45 persons present.

On recommendation of the council Victor J. Evans, Washington, D. C., was elected to active membership.

The president announced the recent deaths of Charles A. Davis and S. M. Gronberger, members of the society.

The first communication of the regular program was by M. W. Lyon, Jr., "Longevity of Bacteria." Dr. Lyon described a culture of *Bacillus paratyphosus B* which had been hermetically sealed in a glass tube in ordinary culture medium for the past ten years and exhibited a living subculture which had been made from it. He called attention to the short life of certain organisms and the long life of others, especially those producing spores. This communication was discussed by Dr. L. O. Howard and Mrs. E. M. Enlows.

The second paper of the regular program was by Dr. L. Stejneger: "The Amphisbænoid Lizards and their Geographic Distribution." Dr. Stejneger called attention to the various theories that have been advanced to account for distribution of animals and explained how the Amphisbænoid lizards with their peculiar morphology and habits were particularly adapted to show former connections with now separated land masses and islands. The distribution and relationships of these lizards clearly showed a former land connection between South America and Africa. Dr. Stejneger's paper was illustrated by charts, diagrams and maps, showing the classification, the structural taxonomic characters, probable evolution and geographic distribution of the Amphisbænoid lizards. The chair, Drs. L. O. Howard, C. H. T. Townsend, General Wilcox and others took part in the discussion.

The last paper of the evening was by W. L. McAtee: "Sketch of the Natural History of the District of Columbia." Mr. McAtee gave a very interesting historical account of the study of the natural history of the District of Columbia from the earliest accounts of Capt. John Smith who ascended the Potomac River as far as Little Falls and made notes on the fauna of the region; and the account of other early explorers and travelers, down to recent times. The speaker gave many entertaining quotations from the writings of these early naturalists, told about the early societies interested in the natural history of the District, and described the faunal and floral lists that have appeared, mentioning the number of species in each, and calling attention to the fact that the District of Columbia is the type locality for many species. Mr. McAtee's communication was discussed by the chair, Dr. L. O. Howard, D. E. Lantz and Wm. Palmer.

M. W. LYON, JR.,
Recording Secretary

THE ANTHROPOLOGICAL SOCIETY OF WASHINGTON

At the 488th meeting of the society, held October 13, 1915, jointly with the Medical Society of the District of Columbia, Dr. Aleš Hrdlička read a paper on "The Evolution of Man in the Light of Recent Discoveries and its Relation to Medicine." Human evolution is now an accepted doctrine in natural history. In addition to the older evidence in the analogies between man and other mammals, the resemblances in embryonic development, the presence of vestiges or reversions, and the like, in recent years a large series of prehistoric remains have completed the demonstration. The evidence is conclusive, although there are as yet important gaps in the line, especially relating to the earlier periods. Among recent changes in man's "evolution" are deterioration of the teeth and disharmonies in the facial structure. Parts which become less useful are eliminated or weakened and degenerated. Progressive and retrogressive changes that are not harmonious or beneficial necessitate medical or surgical intervention. The erect posture results in greater disorders, as in pregnancy. The great enlargement of the brain results in imperfections. The ability of procreation is adversely affected. The study needs the enlightened help of all branches of medicine.

DANIEL FOLKMAR,
Secretary